UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Region III 841 Chestnut Building Philadelphia, Pennsylvania 19107

SUBJECT: Review of the RI/FS Work DATE: January 11, 1990

Plan and QAPjP prepared by Weston for the Standard Chlorine Company NPL Site.

FROM:

Bernice Pasquini, Geologist [Technical Support Section (3HW15)

TO:

Robert Guarni, RPM DE/MD Section(3HW25)

After reviewing the groundwater investigation portions of the subject documents and visiting the Standard Chlorine Company property, I recommend the following:

Groundwater flow direction west of the subject site has not been evaluated, and with the proposed placement of the Columbia monitoring wells in the RI/FS workplan, the direction of groundwater flow to the west of the site can not be evaluated and the extent of contamination can not be appropriately delineated. Therefore, it would be advantageous to place two monitoring wells to the west of the site on the Air Products Company's property. In response to our recommendation, Delaware's Department of Natural Resources and Environmental Control (DE DNREC) provided a map (see attachment 1) to EPA, during a January 2, 1990 meeting with DE DNREC, pinpointing proposed locations by Standard Chlorine Company of two wells on the Air Products Company property. the meeting we concurred with the proposed locations and agreed that the northernmost well would replace the Work Plan proposed well number 10. Agreement was also reached that the southernmost well would be in addition to the 10 proposed wells in the August, 1989 RI/FS work plan (i.e. a total of 11 Columbia Wells will be The additional well is warranted constructed). (i.e. well number 11) as the proposed well locations for Monitoring Well number one through nine are needed in order to better delineate the extent of groundwater contamination, determine effectiveness of the recovery well system, provide additional ground water level readings, and delineate the dense non-aqueous phase liquid.

Relocation of any of the proposed nine monitoring well locations would compromise the RI/FS's groundwater investigation objectives.

- Currently there are no background wells proposed in the August, 1989 RI/FS Work Plan for placement and/or sampling. During the January 2, 1990 meeting with DE DNREC, it was stated that there should be background wells and that they should be sampled. We also discussed the shallow (Columbia) wells south of Govenors Lea Road used as Monitoring Wells by TEXACO for use as background wells for the Standard Chlorine Company site. No decision was made, but, I strongly recommend sampling three of these wells during the RI/FS (to be determined by DE DNREC and EPA). One well should be analyzed for TCL, TAL, and chlorinated benzene derivatives. The other two wells should be analyzed for benzene and its chlorinated derivatives.
- 3. Since the subject documents mention several other spills (some acid spills) and there is no record in the Work Plan or the QAPP of groundwater samples being analyzed for the TČL/TAL lists, I recommended, during the January 2, 1990 meeting with DE DNREC, that additional groundwater samples be analyzed for the TCL/TAL list. DE DNREC indicated that groundwater samples at the Standard Chlorine site may have been analyzed for the TCL/TAL in the early 1980's and that they would get back to us concerning whether these analytical results existed. During a subsequent conversation with Diane Wehner of DE DNREC by telephone on January 3, 1990, Diane indicated that their Standard Chlorine Company file did not contain any TCL/TAL analytical groundwater results and consequently the groundwater was never analyzed for the TCL/TAL list. She also indicated that she spoke with Robert Touhey with the Standard Chlorine Company concerning our recommendation of additional groundwater samples being analyzed for TCL/TAL list. Mr. Touhey wanted justification for any additional samples (other than the two identified in the RI/FS Work Plan) being analyzed for the TCL/TAL list since the only products or raw materials they used in their operational history will be analyzed for during the RI/FS work plan (i.e. benzene and its chlorinated derivatives). Diane and I agreed that at this point and time the two on site groundwater samples to be analyzed for the TCL/TAL list would be sufficient and that both EPA and DE DNREC would choose the locations (i.e. wells from which these

two samples are to be obtained). It was also agreed that subsequent sampling for TCL/TAL of the other wells would occur contingent upon well sample results.

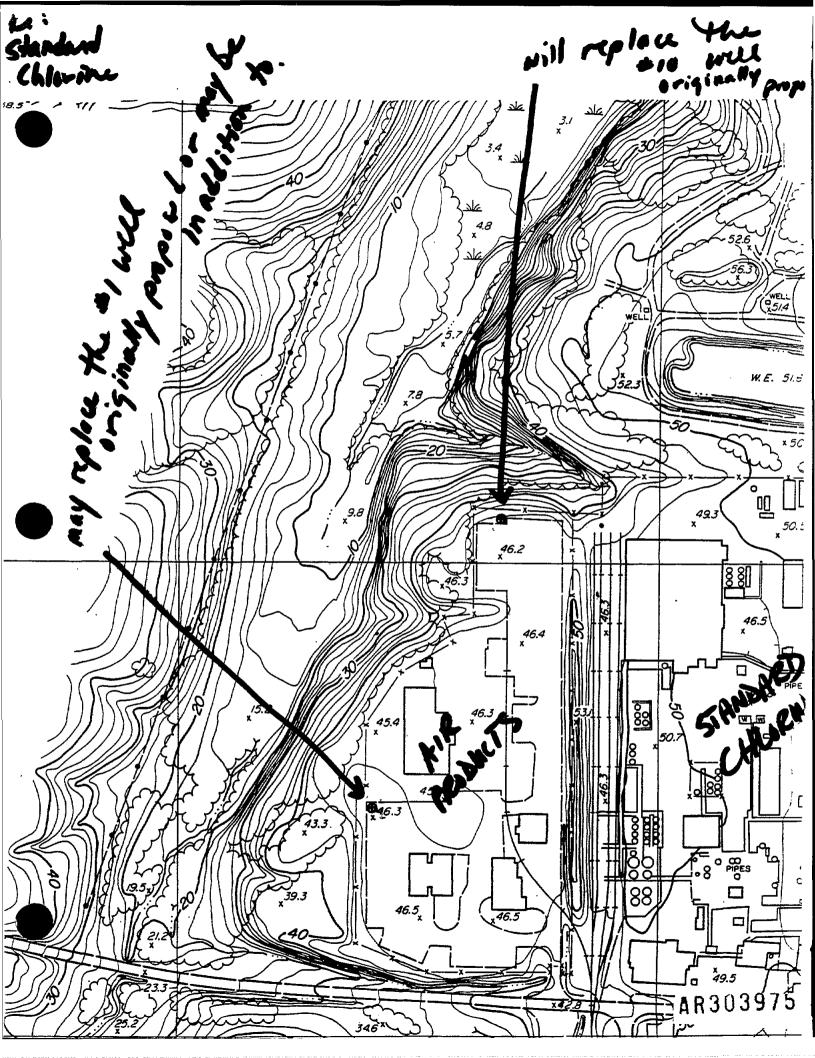
- 4. As indicated during the January 2, 1990 meeting with DE DNREC, the Hazard Ranking System (HRS) identifies use of the Columbia aquifer as a source of drinking water by individual homeowners (see attachments 2) approximately 7,000 feet to the south-southwest of the site and yet the QAPP on page 1-6 states that'... no wells are known to draw water from the Columbia Formation." Even though these wells would not be impacted by the site, we informed the DE DNREC that wells within a one to two mile radius need to be identified whether they are impacted or not for information purposes. The DE DNREC indicated that they would request that this information be included in future reports (e.g. RI/FS, exposure assessment, and risk assessment).
- 5. During the January 2, 1990 meeting with DE DNREC an issue concerning the appropriateness of using inorganic bentonite (i.e. mud) as a drilling fluid. when constructing monitoring wells was brought up. Use of mud as a drilling fluid would cause physical (i.e. hydraulic properties) and chemical change (such as increase in ph) of the aquifer and hence would not provide a representative sample of that aquifer. The DE DNREC indicated that use of potable water as the drilling fluid would introduce a large volume of water to the aquifer and consequently cause some physical and chemical parameters of the aquifer to change. To avoid problems, I recommend that the Potomac wells be partially drilled using the inorganic bentonite (i.e. mud) as the drilling fluid to approximately 20 feet above the top of the proposed screened interval or to the depth of the bottom of the outer casing. The driller should continue drilling the rest of the hole with potable water as the drilling fluid.

If there are any questions concerning the preceding comments, feel free to contact me at X-1268.

cc: Diane Wehner

Attachments

Attachment 1



Attachment 2

SAMPLE LOG FIELD TRIP REPORT DELLAWARE CITY PVC PLANT TDD NO. F3-8204-05 EPA No. DE-07

See figure
E+Z,
for locations

Date	Time	Location	Well Depth (below grade)	Water Level (below grade)
		. •		
4/27/82	10:00	Koval-Alger Deep Well	60 ft.	-
4/27/82	10:30	Railer Blank	-	
4/27/82	10:30	Koval-Alger Shallow Well	32 ſt.	17 ft.
4/27/82	11:00	Tennyson's Well	- ·	-
4/27/82	<u>-</u>	Sample Blank		-
5/06/82	_	Sample Blank		-
5/06/82	09:15	Bailer Blank	-	
5/6/82	09:30	Observation Well - 3	68 ft.	41.21 ft.
5/06/82	10:15	Observation Well - 2	66 ft.	37.74 ft.
5/06/82	11:20	Observation Well - 1	66 ft.	- 41.21 ft.
5/06/82	10:50	Grey's Home Well	-	-
6/01/82	10:45	Observation Well - 5	60 ft.	33 ft.
6/01/82	11:07	Observation Well - 7	32 ft.	19 ft.
6/01/82	11:40	Fairweather Marine Center	60 ft.	-
6/01/82	11:50	Jones' Well at 2224 Corbitt F	Rd. 30 ft.	-
6/01/82	12:10	2202 2224 Corbitt Rd. Well	•••	
6.01/82	13:35	Cetty Well OR-4	380 fr.	86.0 ft.

TITLE: map of Sample Locations Getty well 6 OR-4 2202 - 1 Pt Stuffer Chemical Congany Tracking of a rile p Debunre City Joneswell-[] F3-8204-05 ASANDONED RR · 0W-5 . ow-3 Koval Home [] Algerhanei Qc 2 DM-1 QL [-Tennyson home A Columbia wells -213 marked Oc.

SITE NAME: Delaware City PVC Plant TDD NO .: F3-8204-05

SOURCE: site sketch __ FIGURE E-2

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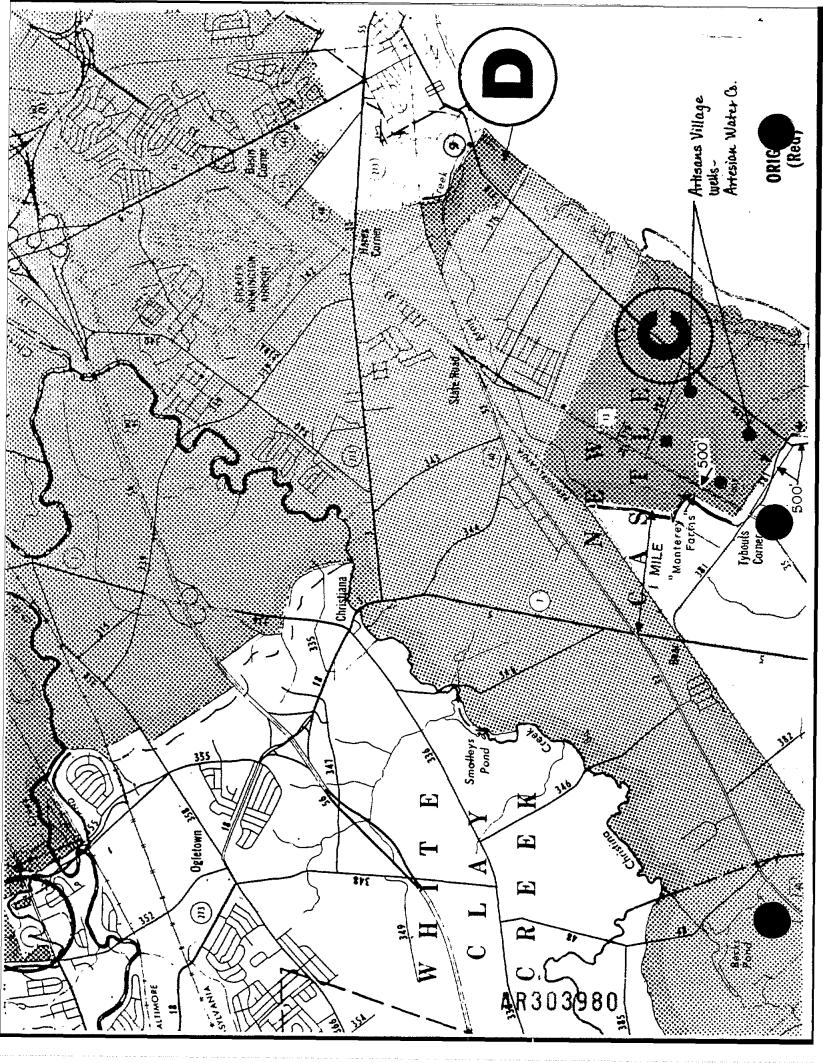
AR303978

RT. 13 E16 2 **1**/ ORIGINAL (Tab) WRANGLE 5: אורר From which well RD. SCULLION ? P. WILSON

STEAKER

STEAKER KELLER , SINGE LEON 2:10 (RT. 72) M McGHEE DAVIDSON I'I NOTE U Residences McCor RD B. WILSON All In Columbra aquifer, except Spicer & Scullion hist sure.
Also, Shetzler may no longer priside there. N KrIVE 110 2 1 1 2 0 1 4 KRAEMER 5-17 SUNNYSIDE LN. (Net Same En) 131.5 μιεουΫ BARLOW

AR303979



ORIGINAL (Red)

(Red)			
RECORD OF	PHONE CALL DISCUSSION FIELD TRIP CONFERENCE		
COMMUNICATION	OTHER (SPECIFY)		
	(Record of Item ch	DATE	
Mr. Peter Johnson , Gr. V.P. Arterian		4/3/85	
Irterian I	Laura Boornayan	TIME	
Water supply wells - Or	rtisans Village		
RY OF COMMUNICATION		is h site	
Cared to exception wells of	Octesian Water Co within 3 mil	And In 3 wells	
Well location referred to as	artisans Village. They are perm	nuck for I was	
but only use two (the the	herd not yet drilled). The o	nes they use	
are the ones along Rouse	e 9. It is not possible to as	ey how many	
the day and see as a second see	well since there is a con	unon distributioni	
residences was nerved por	r well since there is a com		
hetwork.			
Well depths are 215 and	1 225 feet.		
	A C		
They will send me drill	ing logs.		
1984: Wells 1-2 at Or	tisans Village pumped 1200 ga	l/min (900 + 300)	
^			
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Customer is a hi	sidence.		
Drunglerred me to Bonco	elone Larman :		
dell' Parte	10 257 MM Call Iday /134 7	william cal (is) 1001	
Collins Park Wel	u: 351,000 get rang. (120.1	multin gac/gc / 1184	
Costle Hills : Co	alore Laxman : ll : 357,000 gal/day. (130.7 ombined 3 wells : 757,000 gal/	day (277 million gal/yr)	
DSIDES VC LICH LAKEN ON REGUIRED			
Total no. served	l by artesian 150,000 peop nucceed distribution system.	le.	
Common interco.	nuceted distribution system.		
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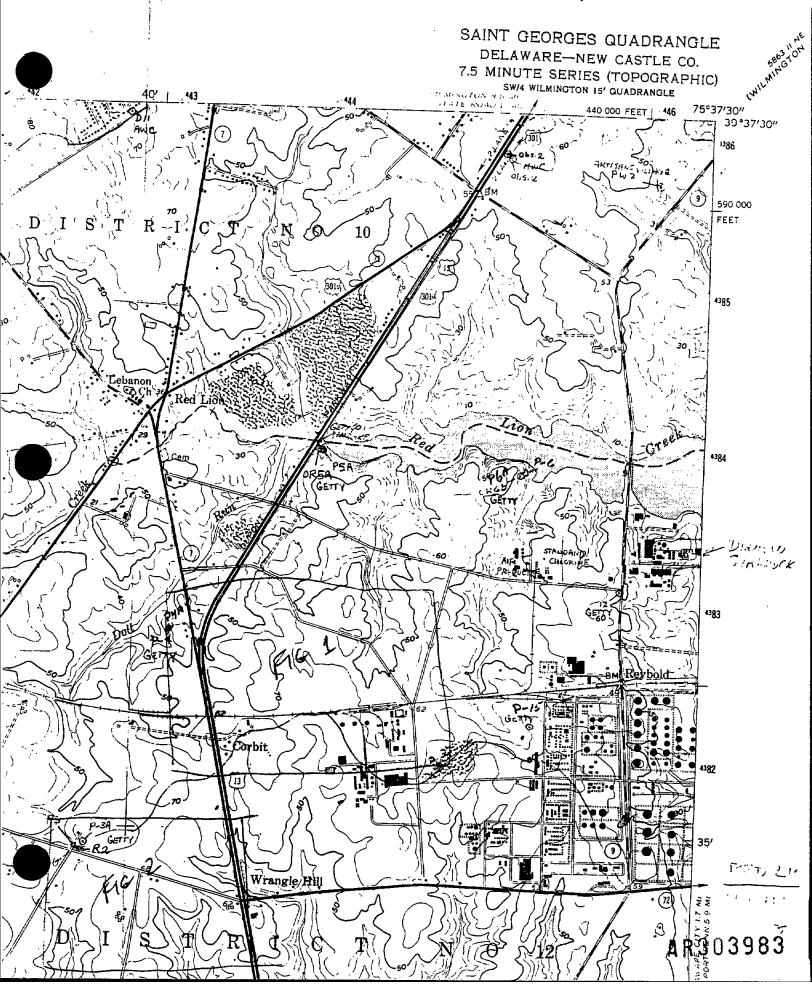
INFORMATION COPIES

TO:

ORIGINAL (Red)

SAMPLE LOG FIELD TRIP REPORT DELAWARE CITY PVC PLANT TDD NO. F3-8204-05 EPA No. DE-07 See figure
E+Z,
for locations

•	Date	Time	Location (Well Depth (below grade)	Water Level (below grade)
	4/27/82	10:00	Koval-Alger Deep Well	60 ft.	-
	4/27/82	10:30	Railer Blank	-	-
	4/27/82	10:30	Koval-Alger Shallow Well	32 ft.	17 ft.
	4/27/82	11:00	Tennyson's Well		· -
	4/27/82	- '	Sample Blank		•
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)	6/01/82	11:40	Fairweather Marine Conter	60 fr.	-
	6/01/82	11:50	Jones' Well at 2224 Corbitt H	Rd. 30 ft.	-
	6/01/82	12:10	2202 2224 Corbitt Rd. Well	-	. -
-	6.01/82	13:35	Getty Well OR-4	380 ft.	86.6 St.







STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL DIVISION OF ENVIRONMENTAL CONTROL WATER RESOURCES SECTION EDWARD TATNALL BUILDING

P.O BOX 1401 DOVER, DELAWARE 19901

TELEPHONE: (302) 678 - 4761

NAME CHARLES B MCCHFFERY SR.	HOME PHONE # 302-834-1656
ADDRESS 983 S. DUPENT HUY	WORK PHONE #
NEW CASTLE DEL 19720	
HOUSE LOCATION (road junction, distances, lot #)	
NUMBER OF PEOPLE LIVING IN HOUSE3	
DO YOU OWNYE.S OR RENT	YOUR HOUSE?
ARE YOU THE ORIGINAL OWNER? YES N	0
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME?	
IF YOU RENT, WHAT IS THE OWNER'S NAME?	·
OWNER'S ADDRESS	
TYPE OF WELL: BORED DRILLED _X JE	TTED/WASHED DUG
DRILLERS NAME: YALTER SLAUCH	INEOLY UNIVERSITY PA
APPROXIMATE DATE OF INSTALLATION: 1950	
DLF10	
WELL SCREEN MATERIAL: STEEL X PLASTIC	CONCRETE
WOOD BRICK	#R3039

HOUSE WATER PIPES: LEAD	PLASTIC	COPPER	OTHER STEEL
OGOSTIDE SPIGOT: YES X	NO		
PUMP TYPE: ELECTRIC X	GAS	HAND	
DO YOU HAVE A WATER PRESSURE TAN	K? YES X	NO	



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TELEPHONE: (302) 678 - 4761

NAME M. LEO WayTKO ADDRESS 9125 Red Libural Pt#301 WORK PHONE # WEW Castle. D=1.19720 HOUSE LOCATION (road junction, distances, lot #)	
NUMBER OF PEOPLE LIVING IN HOUSE	
ARE YOU THE ORIGINAL OWNER? YES NO	
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME? IF YOU RENT, WHAT IS THE OWNER'S NAME?	,
OWNER'S ADDRESS	
TYPE OF WELL: BORED DRILLED JETTED/WASHED	DUG
DRILLERS NAME: From Middletown Och Meddletown	Milling Company
APPROXIMATE DATE OF INSTALLATION: Daniely of 1980	J J
APPROXIMATE DATE OF INSTALLATION: January of 1980 CLE SCHEEN W. F. L. L.: STEEL X PLASTIC CONCRETE	,
	 -
WOOD BRICK	AR303986

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HOUSE WATER PIPES: LEAD	PLASTIC	COPPER	OTHER
DUNCOSE SPIGOT: YES X	NO		
PUMP TYPE: ELECTRIC	GAS	HAND	
OO YOU HAVE A WATER PRESSURE TANK	(? YES Y	NO	



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EDWARD TATNALL BUILDING P.O Box 1401

DOVER, DELAWARE 19901

TELEPHONE: (302) 678 - 4761

NAME Charles Awdrews HOME PHONE # 834-218 ADDRESS 975 S. Deepart Itany WORK PHONE #	<u> </u>
HOUSE LOCATION (road junction, distances, lot #) 301 \(\frac{2}{5}\) \(\frac{1}{3}\)	
	(
NUMBER OF PEOPLE LIVING IN HOUSE	
DO YOU OWN OR RENT YOUR HOUSE?	
ARE YOU THE ORIGINAL OWNER? YES NO	
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME? DARWES	
IF YOU RENT, WHAT IS THE OWNER'S NAME?	
OWNER'S ADDRESS	
, man - , man	
TYPE OF WELL: BORED DRILLED JETTED/WASHED DUG	
DRILLERS NAME:	•
APPROXIMATE DATE OF INSTALLATION:	
with the Mills 30	
WELL SCREEN MATERIAL: STEEL PLASTIC CONCRETE	
WOOD BRICK AR30	3988

HOUSE WATER PIPES: LEAD	PLASTIC	COPPER X	OTHER
OUTSIDE SPIGOT: YES >	NO		
PUMP TYPE: ELECTRIC	GAS	HAND	
DO YOU HAVE A WATER PRESSURE TAN	K? YFS ≫	МО	



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STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL DIVISION OF ENVIRONMENTAL CONTROL WATER RESOURCES SECTION EDWARD TATNALL BUILDING P.O. BOX 1401

DOVER, DELAWARE 19901

TELEPHONE: (302) 678 - 4761

NAME / Orris (Lindsey HOME PHONE # 30 ADDRESS / OBTRED LIEN Rd WORK PHONE # New (2stle De - 1472c) HOUSE LOCATION (road junction, distances, lot #) / m. south of Rts 71-30/	
NUMBER OF PEOPLE LIVING IN HOUSE	
DO YOU OWN / 5 OR RENT YOUR HOUSE?	
ARE YOU THE ORIGINAL OWNER? YES YES NO	
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME?	
IF YOU RENT, WHAT IS THE OWNER'S NAME?	
OWNER'S ADDRESS	F
TYPE OF WELL: BORED DRILLED JETTED/WASHED	DUG
DRILLERS NAME: Bill wheatley	
APPROXIMATE DATE OF INSTALLATION: 19580+19.59	
111 m. 50 Rt.	
WELL SCO R MATERIAL: STEEL PLASTIC CONCRETE	
WOOD BRICK	AR303990

HOUSE WATER PIPES: LEAD ____ PLASTIC ___ COPPER ___ OTHER ____

OUTSIDE SPIGOT: YES ____ NO ____

PUMP TYPE: ELECTRIC ___ GAS ____ HAND ____

DO YOU HAVE A WATER PRESSURE TANK? YES ____ NO ____



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TELEPHONE: (302) 678 - 4761

DNREC QUESTIONNAIRE

NAME CHARLES P. REILLY HOME PHONE # \$34-601 ADDRESS 1010 RED LION POR WORK PHONE # 421-6101
NEW CARME, DE 19720 HOUSE LOCATION (road junction, distances, lot #) ROUTE 71, APPROXIMATELY
1/5 From Route 13
NUMBER OF PEOPLE LIVING IN HOUSE
DO YOU OWN OR RENT YOUR HOUSE?
ARE YOU THE ORIGINAL OWNER? YES NO
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME? <u>CUACIALE + DOLDYMY NEILSON</u>
IF YOU RENT, WHAT IS THE OWNER'S NAME?
OWNER'S ADDRESS
TYPE OF WELL: BORED DRILLED JETTED/WASHED DUG
DRILLERS NAME: UNKNOWN WALLACE D Neilson
APPROXIMATE DATE OF INSTALLATION: 1945
all with 14 feet.
WELL BURGEN MATERIAL: STEEL PLASTIC CONCRETE
WOOD BRICK ARROWS

AR303992

HOUSE WATER PIPES: LEAD	PLASTIC	COPPER	OTHER
OUTSIDE SPIGOT: YES	NO		
PUMP TYPE: ELECTRIC	GAS	HAND	
DO YOU HAVE A WATER PRESSURE TANI	K? YES	NO	



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TELEPHONE: (302) 678 - 4761

NAME MR. & MRS. W. C. Mailson HOME PHONE # 834-8930 ADDRESS 1016 Red Lich Rd. WORK PHONE #
HOUSE LOCATION (road junction, distances, lot #) 40/1600 ranch house CN Rte 30/ Est side 3nd house dawn from Gravel pit Entrance NUMBER OF PEOPLE LIVING IN HOUSE 4
DO YOU OWN OR RENT YOUR HOUSE? ARE YOU THE ORIGINAL OWNER? YES NO IF NO, WHAT IS THE ORIGINAL OWNER'S NAME? OWNER'S ADDRESS
TYPE OF WELL: BORED DRILLED JETTED/WASHED DUG DRILLERS NAME:
APPROXIMATE DATE OF INSTALLATION: 1976 WELL SURLIN MATERIAL: STEEL PLASTIC CONCRETE WOOD BRICK

PLASTIC	COPPER	OTHER
NO		
GAS	HAND	
YES L	NO	
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lane		
y/ene		
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		•
proethyler	ne	
ethane		
	GAS YES for the. Pane Tylene	GAS HAND



ORIGINAL (Red)

STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL DIVISION OF ENVIRONMENTAL CONTROL WATER RESOURCES SECTION EDWARD TATNALL BUILDING P.O. BOX 1401

DOVER, DELAWARE 19901

TELEPHONE: (302) 678 - 4761

NAME CHARLES A FRITZ HOME PHONE # \$34-1716
ADDRESS 1007 RED LION RUAD WORK PHONE #
NEW CHSTLE, DE. 19720
HOUSE LOCATION (road junction, distances, lot #)
ACROSS FROM LAINDFILL - DE ROOTE 71 - U.S. 301 SOUTH
NUMBER OF PEOPLE LIVING IN HOUSE 2
DO YOU OWN YES OR RENT YOUR HOUSE?
ARE YOU THE ORIGINAL OWNER? YES NO
IF NO, WHAT IS THE ORIGINAL OWNER'S NAME?
IF YOU RENT, WHAT IS THE OWNER'S NAME?
OWNER'S ADDRESS
TYPE OF WELL: BORED DRILLED DETTED/WASHED DUG
DRILLERS NAME: REV. LACEY BRYANT DECEASED
APPROXIMATE DATE OF INSTALLATION: 1214 1973
WELL DEPTH 20 FT.
WELL SCREEN MATERIAL: STEEL V PLASTIC CONCRETE
WOOD BRICK AR303996

ORIGINAL (Red)

NOUSE WATER PIPES: LEAD	PLASTIC	COPPER	OTHER
OUTSIDE SPIGOT: YES L	NO		
PUMP TYPE: ELECTRIC -	GAS	HAND	
OO YOU HAVE A WATER PRESSURE TAN	K? YES b	NO	



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DOVER, DELAWARE 19901

ORIGINAL (Red)

TELEPHONE: (302) 736-4761

	HOME PHONE # <u>(.54-2220</u>
HOUSE LOCATION (road junction, distances,	•
CA BETWEEN TYPOUTS	
RED LIEN	
Number of People Living In House	
Do you Own or Rent	your house?
Are you the original owner? Yes	No
If No, what is the original owner's name	?
If you rent what is the owner's name	· · · · · · · · · · · · · · · · · · ·
Owner's Address	: \$
Owner's Telephone Number	
Type of Well: Bored Drilled	Jetted/Washed Dug
Drillers Name:	•
Approximate Date of Installation: 19	6-6
Well Depth 15-18'	
Well Screen Material: Steel Plast	ic Concrete
Wood Brick	

	Ipon: Lend		_ Copper	Other
	t: Yes	Gas	Hand	
Do You Have a	Water Pressure Ta	ink? Yes	w/	No
Do You SYSTER	HAVE A W	ATER TO	CENTMEN TYPE ?	Hō.
septic	benk 100	+ Ff	uscl ,	ORIGINAL (Red)
	7	· · · · ·		